

## PCT REQUEST

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<b>0</b>	<b>For receiving Office use only</b>	
<b>0-1</b>	International Application No.	
<b>0-2</b>	International Filing Date	
<b>0-3</b>	Name of receiving Office and "PCT International Application"	
<b>0-4</b>	<b>Form PCT/RO/101 PCT Request</b>	
<b>0-4-1</b>	Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.163)
<b>0-5</b>	<b>Petition</b> The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
<b>0-6</b>	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
<b>0-7</b>	Applicant's or agent's file reference	1463
<b>I</b>	<b>Title of Invention</b>	<b>MULTI-OUTLET CASTING NOZZLE</b>
<b>II</b>	<b>Applicant</b>	
<b>II-1</b>	This person is	applicant only
<b>II-2</b>	Applicant for	all designated States except US
<b>II-4</b>	Name	VESUVIUS CRUCIBLE COMPANY
<b>II-5</b>	Address	4604 Campells Run Road Pittsburgh, P 15205 United States of America
<b>II-6</b>	State of nationality	US
<b>II-7</b>	State of residence	US
<b>II-8</b>	Telephone No.	412-788-4441
<b>II-9</b>	Facsimile No.	412-787-6091
<b>III-1</b>	<b>Applicant and/or inventor</b>	
<b>III-1-1</b>	This person is	applicant and inventor
<b>III-1-2</b>	Applicant for	US only
<b>III-1-4</b>	Name (LAST, First)	RICHAUD, Johan L.
<b>III-1-5</b>	Address	6 Waterwheel Cres. Dundas, Ontario L9H-7B6 Canada
<b>III-1-6</b>	State of nationality	FR
<b>III-1-7</b>	State of residence	CA

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III-2	<b>Applicant and/or Inventor</b>	
III-2-1	This person is	applicant and inventor
III-2-2	Applicant for	US only
III-2-4	Name (LAST, First)	HEASLIP, Lawrence J.
III-2-5	Address	4375 Spruce Avenue Burlington, Ontario L7L-1L7 Canada
III-2-6	State of nationality	CA
III-2-7	State of residence	CA
III-3	<b>Applicant and/or Inventor</b>	
III-3-1	This person is	applicant and inventor
III-3-2	Applicant for	US only
III-3-4	Name (LAST, First)	DORRICOTT, James
III-3-5	Address	2093 Simco Dr. Burlington, Ontario L7M-4E8 Canada
III-3-6	State of nationality	CA
III-3-7	State of residence	CA
III-4	<b>Applicant and/or Inventor</b>	
III-4-1	This person is	applicant and inventor
III-4-2	Applicant for	US only
III-4-4	Name (LAST, First)	XU, Dong
III-4-5	Address	3016 Hawktail Crescent Mississauga, Ontario L5M-6W3 Canada
III-4-6	State of nationality	CA
III-4-7	State of residence	CA
IV-1	<b>Agent or common representative; or address for correspondence</b> The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	SATINA, Donald M.
IV-1-2	Address	Vesuvius USA Corporation 4604 Campells Run Road Pittsburgh, Pennsylvania 15205 United States of America
IV-1-3	Telephone No.	412-788-4441
IV-1-4	Facsimile No.	412-787-6091
IV-1-6	Agent's registration No.	31875
IV-2	<b>Additional agent(s)</b>	additional agent(s) with same address as

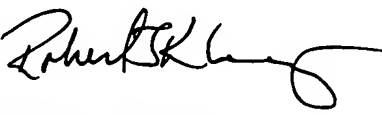
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IV-2-1	Name(s)	first named agent KLEMZ, Robert S. (46305)	
V	DESIGNATIONS		
V-1	The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.		
VI-1	Priority claim of earlier national application		
VI-1-1	Filing date	17 November 2003 (17.11.2003)	
VI-1-2	Number	60/520,613	
VI-1-3	Country	US	
VI-2	Priority document request  The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	4	✓
IX-2	Description	7	-
IX-3	Claims	3	-
IX-4	Abstract	1	✓
IX-5	Drawings	8	-
IX-7	TOTAL	23	

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	Accompanying Items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-17	PCT-SAFE physical media	-	✓
IX-19	Figure of the drawings which should accompany the abstract	8a	
IX-20	Language of filing of the International application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	KLEMZ, Robert S.	
X-1-2	Name of signatory	AGENT	
X-1-3	Capacity		
X-2	Signature of applicant, agent or common representative		
X-2-1	Name (LAST, First)		
X-2-2	Name of signatory		
X-2-3	Capacity		

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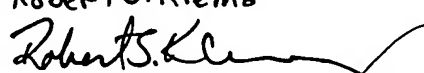
10-1	Date of actual receipt of the purported International application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported International application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

## FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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**PCT (ANNEX - FEE CALCULATION SHEET)**

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(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only	
0-1	International Application No.	
0-2	Date stamp of the receiving Office	
0-4	Form PCT/RO/101 (Annex) PCT Fee Calculation Sheet	
0-4-1	Prepared Using	PCT-SAFE [EASY mode] Version 3.50 (Build 0002.163)
0-9	Applicant's or agent's file reference	1463
2	Applicant	VESUVIUS CRUCIBLE COMPANY
12	Calculation of prescribed fees	fee amount/multiplier      Total amounts (USD)
12-1	Transmittal fee      T	⇒      300
12-2-1	Search fee      S	⇒      1920
12-2-2	International search to be carried out by	EP
12-3	International filing fee (first 30 sheets)      I1	1134
12-4	Remaining sheets      0	
12-5	Additional amount      (X) 0	
12-6	Total additional amount      I2	0
12-7	i1 + i2 =      I	1134
12-12	EASY Filing reduction      R	-81
12-13	Total International filing fee (i-R)      I	⇒      1053
12-14	Fee for priority document	
	Number of priority documents requested      1	
12-15	Fee per document      (X) 20	
12-16	Total priority document fee:      P	⇒      20
12-17	TOTAL FEES PAYABLE (T+S+I+P)	⇒      3293
12-19	Mode of payment	authorization to charge deposit account
12-20	Deposit account Instructions	
	The receiving Office	United States Patent and Trademark Office (USPTO) (RO/US)
12-20-1	Authorization to charge the total fees indicated above	✓
12-20-2	Authorization to charge any deficiency or credit any overpayment in the total fees indicated above	✓
12-20-3	Authorization to charge the fee for priority document	✓
12-21	Deposit account No.	220281
12-22	Date	17 November 2004 (17.11.2004)
12-23	Name and signature	Robert S. Klema 

The present invention concerns a submerged entry nozzle for use in the continuous casting of liquid metal. The nozzle comprises a central bore and a plurality of pairs of discharge outlets. The cross-sectional area of the central bore decreases between pairs of discharge outlets, such that ratio of height to width of any outlet is one or less